

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of manufacturing a phase shift mask having, on a transparent substrate, a main opening formed by partly removing a light-shielding film and an auxiliary opening provided at a peripheral portion of said main opening, said auxiliary opening having a width incapable of being resolved when transferring, wherein the transparent substrate is partly removed in a depth direction such that phases of light passing through the main opening and light passing through the auxiliary opening differ from each other by a predetermined angle, comprising:

a first process including

a step of preparing a photomask blank having the light-shielding film, a thin film for forming an etching mask layer, and a first resist film which are formed in this order on the transparent substrate,

said light-shielding film comprising a material being etchable by a fluorine-based etching medium,

said thin film having a resistance to the fluorine-based etching medium, comprising a metal selected from chromium, tantalum, titanium, aluminum, hafnium, vanadium, or zirconium, an alloy of one or more of said metals, a metal compound containing one or more of oxygen, nitrogen, carbon, fluorine along with one of said metal or alloy,

a step of exposing a pattern corresponding to the main opening and the auxiliary opening onto the first resist film and then developing to form a first resist pattern, a step of, using said first resist pattern as a mask, etching the thin film to form the etching mask layer, a step of, using the etching mask layer as a mask, etching the light-shielding film, and a step of stripping the remaining first resist pattern,

a second process including a step of forming a second resist film on the transparent substrate obtained in the first process, a step of exposing a pattern corresponding to one of the main opening and the auxiliary opening and then developing to form a second resist pattern, a

step of, using the second resist pattern as a mask, etching part of the transparent substrate to a depth such that the phases of the light passing through the main opening and the light passing through the auxiliary opening differ from each other by the predetermined angle, and a step of stripping the remaining second resist pattern, and

a third process including a step of removing a ~~required~~ part of or whole of the etching mask layer ~~in the substrate obtained in the second process~~.

2. (Cancelled)

3. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said thin film comprises chromium.

4. (New) A method of manufacturing a phase shift mask according to claim 1 wherein, in said second process, part of transparent substrate corresponding to said main opening is etched to said depth such that the phases of the light passing through the main opening and the light passing through the auxiliary opening differ from each other by the predetermined angle.

5. (New) A method of manufacturing a phase shift mask according to claim 1 wherein, in said second process, part of transparent substrate corresponding to said auxiliary opening is etched to said depth such that the phases of the light passing through the main opening and the light passing through the auxiliary opening differ from each other by the predetermined angle.

6. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said light-shielding film comprising silicide of molybdenum, tungsten, or tantalum, or a material containing oxygen, nitrogen, carbon, or fluorine along with said silicide.

7. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said light-shielding film has a light semi-transmissivity.

8. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said light-shielding film has a light semi-transmissivity and, in said third process, a part of the etching mask layer is removed while the other part corresponding to non-transfer region is left on the light-shielding film.

9. (New) A method of manufacturing a phase shift mask according to claim 8 wherein said light-shielding film stacked with said etching mask layer substantially shields exposure light.

10. (New) A method of manufacturing a phase shift mask according to claim 8 wherein said transparent substrate comprises etching stopper film.

11. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said etching mask layer comprises a material which is etchable by a chlorine-based etching medium.

12. (New) A method of manufacturing a phase shift mask according to claim 1 wherein, the exposing step in the first process is carried out with an electron-beam writing apparatus within $\pm 5\text{nm}$ of design value.

13. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said phase shift mask comprises a contact hole pattern.

14. (New) A method of manufacturing a phase shift mask according to claim 1 wherein said predetermined angle is 180 degrees.